APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/349,198	07/07/1999	CHRISTOPHER F. PARKER	22074661-255	6293

26453   7590   11/13/2003

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EXAMINER
COLBERT, ELLA

ART UNIT	PAPER NUMBER
3624	

DATE MAILED: 11/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _27 June 2003_ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under _Ex parte Quayle_, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-6 and 12-20_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-4 and 12-20_ is/are rejected.

7)☒ Claim(s) _5 and 6_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

   If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____ .

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

   a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)	4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5)☐ Notice of Informal Patent Application (PTO-152)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6)☐ Other: .

DETAILED ACTION

1.   Claims 1-6 and 12-20 are pending. Claims 1, 2, 12, and 17 have been amended

in this communication filed 06/27/03 entered as RCE, paper no. 18.

2.   The Claims Objection to claim 1 has been overcome by Applicant's amendment

to claim 1 amended in Amendment C filed 05/28/03 entered as paper no. 15.

3.   The Drawing Objection to figure 3 is hereby withdrawn in view of Applicant's

arguments.

Continued Examination Under 37 CFR 1.114

4.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

06/27/03 has been entered.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

6.   Claims 1,12, and 17 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention. Claim 1 recites "a system for recovering a

database table comprising: ...". It is suggested that before "system" and after "A"

Applicant add "database table recovery system" and after "and" to add some of the

claim language from paragraph 3, page 3 and paragraph 1, page 4, such as "recovering a table that does not require the tablespace from which the table depends and all other tables that depend from the tablespace to be reconstructed" or "returning the reconstructed table to the configuration it was prior to corruption of the data without modifying the configuration of the tablespace and other dependent tables" and in line 13 after "access" add "while the database table is being recovered." In claim 12, consider adding some of the same claim limitations as suggested above for claim 1 and after "receiving" and before "a" add "from the computer". In claim 17, it is suggested after "A" and before "method" to add "computer implemented method" and in line 3 after "receiving" and before "a" add "at the computer".

It is unclear in claims 6, 12-14, and 17 whether Applicant means a "database" table or some other type of "table". It is respectfully requested that Applicant clarify in the claim language the type of "table". Claim 16, lines 1 and 3 would be better read "... wherein the first database table comprises rows and indices, ... comprising: deleting the first database table rows; ...". Claim 17, page 7, line 11 recites "... recover the tablespace". This line would be better recited "... recover the entire tablespace."

Claim Objections

7.   Claims 17 and 19 are objected to because of the following informalities: Claim 17, page 7, line 8 recites "allowing access to rest of the one or more database tables in". This line would be better recited "allowing access to the rest of the one or more database tables in". Claim 19, page 7, lines 3 and 4 recites "deleting all rows of the first database table; and locking out access to indices of the first database table." These

lines would be better recited "deleting all of the rows of the first database table; and

locking out access to the indices of the first database table." Appropriate correction is

required.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 1-4 and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable

over (US 5,721,915) Sockut et al, hereafter Sockut in view of (US 5,517,641) Barry et

al, hereinafter Barry.

With respect to claim 1, Sockut teaches, a database table recovery system (col.

1, lines 20-33 and col. 9, lines 19-22) the database table recovery system operable to

retrieve a backup copy of a tablespace and to apply updates to the backup copy from a

log associated with a database table, and to restore the database table associated with

the tablespace from the updated backup copy without recovering the tablespace (col. 2,

lines 4-11, col. 3, lines 61-67, and col. 4, lines 1-17).

Sockut fails to teach, a tablespace access system coupled to the table recovery system,

the tablespace access system is operable to restrict access to the tablespace to read-

only access.

Barry teaches, a tablespace access system coupled to the table recovery system, the

tablespace access system is operable to restrict access to the tablespace to read-only

access (col. 2, lines 65-67 and col. 3, lines 1-12 and lines 34-40). It would have been

obvious to one having ordinary skill in the art at the time the invention was made to

have a tablespace access system coupled to the table recovery system, the tablespace

access system is operable to restrict access to the tablespace to read-only access and

in view of Sockut's teachings in col. 8, lines 57-67, col. 9, lines 1-18 and lines 37-44 of

database performance and to modify in Sockut because such a modification would

allow Sockut's system to have independent recovery of the data and indexes and a

significant decrease in elapsed time since the log file updates are done for all objects in

the database through the log file.

With respect to claim 2, Sockut teaches. the table recovery system further

comprises a log record sorter system operable to sort log records from the log (col. 7,

lines 25-36).

With respect to claim 3, Sockut teaches, a data page updater system coupled to

the log record sorter system operable to apply log record updates to the backup copy

(col. 7, lines 37-62).

With respect to claim 4, Sockut teaches, a data page scanner system coupled to

the data page updater system, the data page scanner system operable to locate

records associated with the database table in at least one data page (col. 11, lines 41-

67 and col. 12, lines 1-11).

With respect to claim 12, Socket teaches, receiving a backup copy of the

tablespace having one or more database tables (col. 9, lines 19-32), reading log records

associated with a first database table in the one or more database tables (col. 4, lines 5-

11), applying the log records to the backup copy without modifying the configuration of

the tablespace (col. 4, lines 22-29), building new table data pages from the backup copy

(col. 14, lines 66-67), scanning the new table data pages for records of the first

database table (col. 11, lines 52-66), and updating the first database table from the

records (col. 14, lines 12-22). Sockut failed to teach, reading log records associated

with a first database table in the one or more database tables, but it would have been

obvious to one having ordinary skill in the art at the time the invention was made to read

log records associated with a first table in the one or more tables and to modify in

Sockut because such a modification would allow the data to be read and updated in the

first table before it is copied to the new table/tables and a backup copy is made of the

data pages.

With respect to claim 13, Sockut failed to teach, limiting access of the second

table to the tablespace to read-only before the first table is updated and the second

table depends on the tablespace.

Barry teaches, limiting access of the second table to the tablespace to read-only before

the first table is updated and the second table depends on the tablespace (col. 5, lines

12-31). It would have been obvious to one having ordinary skill in the art at the time the

invention was made to limit access of the second table to the tablespace to read-only

before the first table is updated and the second table depends on the tablespace and to

modify in Sockut because such a modification would allow Sockut to have the capability

of retrieving the tablespace but not being able to change it prior to the first table being

updated. It is well known in the art that a read-only document can be displayed or

printed but not altered in any way; read-only memory (ROM) holds programs that

cannot be changed.

With respect to claim 14, Sockut failed to teach, providing update access to the

second table after the first table is updated

Barry teaches, providing update access to the second table after the first table is

updated (col. 4, lines 19-61). It would have been obvious to one having ordinary skill in

the art at the time the invention was made to provide update access to the second table

after the first table is updated and to modify in Sockut because such a modification

would allow the second table to be updated in successive order since the first table is

first to receive the update with the second table following which is in chronological

order. Relational database management systems usually work with two data tables at

the same time, relating the information or data through links established by a common

column or field. A tablespace stores one or more tables containing file pages.

With respect to claim 15, Sockut teaches, sorting the log records (col. 12, lines

51-65).

With respect to claim 16, Sockut teaches, deleting the rows (col. 9, lines 64-67).

Sockut failed to teach, locking the indices.

Barry teaches, locking the indices (col. 7, lines 10-31). It would have been obvious to

one having ordinary skill in the art at the time the invention was made to lock the indices

and to modify in Sockut because such a modification would eliminate the space needed

for the indices and the time needed for accessing the indices.

With respect to claim 17, Sockut teaches, building one or more table data pages

from the backup copy having the log records applied (col. 3, line 61-67 and col. 4, lines

1-30); selecting one or more records from the one or more database table data pages,

the one or more records belonging to the first database table (col. 5, lines 56-67 and

col. 6, lines 1-34); updating the first database table with the one or more records

selected from the one or more table data pages while allowing access to the rest of the

one or more database tables in the tablespace (col. 6, lines 35-50); and wherein the first

database table can be recovered without having to recover the tablespace entirely (col.

7, lines 13-56).

This independent claim is rejected for the similar rationale given for claim 12.

With respect to claim 18, Socket teaches, allowing at least one or more tables to

have update access to the tablespace when the first table is restored (col. 12, lines 18-

25).

With respect to claim 19, Socket teaches, deleting all rows of the first database table (col. 9, lines 64-67). Sockut fails to teach, locking out access to indices in the first database table.

Barry teaches, locking out access to indices in the first database table (col. 7, lines 52-67 and col. 8, lines 1-4). It would have been obvious to one having ordinary skill in the art at the time the invention was made to lock out access to indices in the first database table and to modify in Sockut because such a modification would eliminate the space needed for the indices (index) and the time needed for accessing the indices (index).

With respect to claim 20, Socket teaches, reading the log records from the log record file to a log record workspace (col. 4, lines 5-11), sorting the log records (col. 4, lines 11-17), and applying the log records to the tablespace backup copy (col. 4, lines 22-29 and col. 9, lines 19-22).

Allowable Subject Matter

10.   Claims 5 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11.   The following is a statement of reasons for the indication of allowable subject matter: Applicant's page row extractor system coupled to the data page scanner system operable to extract page rows from the at least one data page that has been located by the data page scanner system in claim 5 and the table row inserter system coupled to the page row extractor system operable to write extracted page rows to the

database table, was not disclosed, made obvious or fairly suggested by the prior art of

record.

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Elliott et al (US 4,945,474) disclosed restoring a database.

Nelson et al (US 5,778,390) disclosed a first and second database environment

and log files.

Bridge, Jr. et al (US 6,272,503) disclosed a database partitioned into a set of

tablespaces.

Doherty et al (US 5,991,772) disclosed restoring part of a database using a

subset of backup files stored for a database.

Hintz et al (US 5,222,235) disclosed reorganization of DB2 data files and a DB2

recovery table.

Inquiries

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ella Colbert whose telephone number is 703-308-7064.

The examiner can normally be reached on Monday-Thursday from 6:30 am -5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vincent Millin can be reached on 703-308-1038. The fax phone number for

the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-308-

1113.

E. Colbert
November 10, 2003